The unitary projector assembly **26** may be of any suitable construction, such as that disclosed and described in my aforementioned copending application. It will be understood that film **42** is mounted on supply and takeup spools **43,43** with the intervening portion passing past the aperture of gate **53**. Light from the high-intensity lamp **44** passes through the film and projects an image therefrom through the projection lens assembly **45**, through the transparent portion **22** of panel **18**, thence onto a reflecting mirror **48** best shown in FIG. **2**. The supply and takeup spools **43** are located on either side of the light beam and are suitably driven by a belt **49** connected with a reversible, variable-speed motor **50** secured to main frame **30** of the projector. A plate of glass **52** hinged to the main frame bears lightly against film **42** and holds it pressed flat and firmly across the projector gate assembly **53**.

Reflecting mirror **48** has a pair of trunnions **55,55** selectively mountable in any pair of a series of slots **56** formed in the edge of a bracket **57** secured to apparatus housing top **15**. A threaded shank **59** attached to the forward edge of the mirror extends through a vertical slot **60** of a vertical panel **61** secured to top wall **15** of the main housing. Shank **59** and mirror **48** may be clamped in any desired tilted position along slot **60** by a clamping nut **62** having a rubber washer **63** bearing against the face of panel **61**.

Another feature of the invention concerns convenient means to facilitate accurate focusing of the projector on display surface **18**. Normally, the focus-adjusting ring **70** of the projector is inaccessible because positioned immediately beneath panel **18**. If this full panel is raised to give access to the adjusting ring, then the panel surface is unavailable to receive the image while adjusting the focusing ring. According to one construction for dealing with this problem, panel **18** may be formed in two parts by a line of severance extending crosswise of counter **12**. Hence, one-half may be lifted to give access to adjusting ring **70** while the other half remains available for viewing the image as the ring is being adjusted.

Alternatively, a retractable focusing accessory may be used of the general type designated generally **75** in FIG. **4**. This accessory comprises a tubular pedestal **76** rigidly secured to main frame **30** and over which is loosely telescoped a thimble **77** urged upwardly by a light compression spring **78**. A stop pin **79** threaded into pedestal **76** is located in a slot **80** of thimble **77** and holds the latter in assembled position. A threaded adjusting ring **81** rotatably supported along the lower end of thimble **77** provides an adjustable stop cooperating with pin **79** to limit the upward movement of member **77** so that its exterior end surface **83** lies flush with the normal surface of panel **18**. Thus, when ring **81** is properly adjusted, its surface **83** will come to rest precisely flush with the normal operating position of the upper surface of panel **18**. Accordingly, it will be understood that the focusing adjustment is made by lifting panel **18** to its open position whereupon member **77** automatically moves to its extended position with surface **83** flush with the normal position of the image display surface. The operator then proceeds to adjust the focusing ring **70** until the portion of the image falling on surface **83** is in sharp focus. The operator then lowers panel **18** automatically shifting member **77** back to its retracted position.

The operation of the described microfilm display apparatus will be readily apparent from the foregoing detailed description of its components and their operative relationship to one another. The projector is loaded with film in the usual manner after first lifting panel **18** to provide access to the projector. The projector may be lifted from bearing ring **28** during the loading process if desired and then simply dropped back into position, care being taken to make certain that toothed ring **33** meshes with the teeth of adjusting ring **35** (FIG. **2**). Before restoring panel **18** to its closed position, the operator may check to make certain that the projector lens **45** is in focus by viewing the image thrown onto surface **83** of the supplemental image display member **77**. This having been done, panel **18** is closed and equipment is ready for use.

The film is advanced in either direction past gate **53** by the use of control knob **85** (FIG. **1**). It will be understood that this control knob can be rotated in either direction from its "off" or "null" position and controls the polarity and amount of energizing current supplied to film-drive motor **50**. If knob **85** is turned to the right, the film is advanced forward slowly and with increasing speed as knob **85** is advanced clockwise. If the film is advanced slightly too far, this error is corrected by turning the knob slightly counterclockwise to reverse the motor **50** at slow speed, the knob being returned to its neutral or "off" position when the film is precisely in position.

The image is, of course, projected through opening **22** onto mirror **48** which reflects the image onto the main display surface provided by panel **18**.

If the viewer experiences difficulty in reading matter on the rear edge of the viewing panel, he may shift the image toward him by manipulating clamping knob **62** and then moving this knob upward slightly along slot **60** to tilt mirror **48**, thereby throwing the rear portion of the image closer to the forward edge of the panel. Likewise, the image may be made larger or smaller by loosening nut **62** and then shifting mirror **48** to a different pair of notches **56**.

If an image thrown on surface **18** is oriented in the wrong direction, the operator merely engages the knurled rim of control ring **37** with his thumb and rotates this ring 90° in one direction or the other until the image is properly oriented, this operation serving to rotate the projector as a whole on turntable-bearing assembly **28** about the axis of projection lens **48**.

While the particular microfilm projector apparatus herein shown and disclosed in detail is fully capable of attaining the objects and providing the advantages hereinbefore stated, it is to be understood that it is merely illustrative of the presently preferred embodiment of the invention and that no limitations are intended to the details of construction or design herein shown other than as defined in the appended claims.

I claim:

1. Microfilm-reading apparatus comprising: means providing a large area image display surface for the material to be read, image reflector means facing toward but spaced forwardly of said image display surface, microfilm projector means located rearwardly of said image display surface with its image projection axis passing centrally through a small area window therethrough in an area located within the perimeter of the image reflected thereon from said image reflector means, and means for shifting the reflected image on the image-reading surface to facilitate reading the portion of the image previously pierced by the projection light beam.

2. Reading apparatus as defined in claim **1** characterized in the provision of means supporting said image display surface in a convenient viewing position for a viewer while seated thereadjacent.

3. Reading apparatus as defined in claim **1** characterized in the provision of means supporting said image display surface generally horizontally adjacent writing surface means convenient to a viewer seated along one edge of said display surface.

4. Reading apparatus as defined in claim **1** characterized in the provision of light-shrouding means enclosing said image display surface except along the forward edge thereof.

5. Reader apparatus as defined in claim **1** characterized in that said image display surface means includes first and second surfaces the first of which receives a portion only of the image from said projector means and the second of which is movable to a position providing the viewer with access to image-focusing means on said projector means and located behind said image display surface, and said second surface being movable to a position giving the viewer access to a focusing adjustment for said projector while the viewer observes the image on said first image display surface to determine when the projector is properly focused.

6. Reader apparatus as defined in claim **5** characterized in that said first image display surface is supported normally in a retracted nonoperating position, and means operatively as-